

Figure 1

2/12

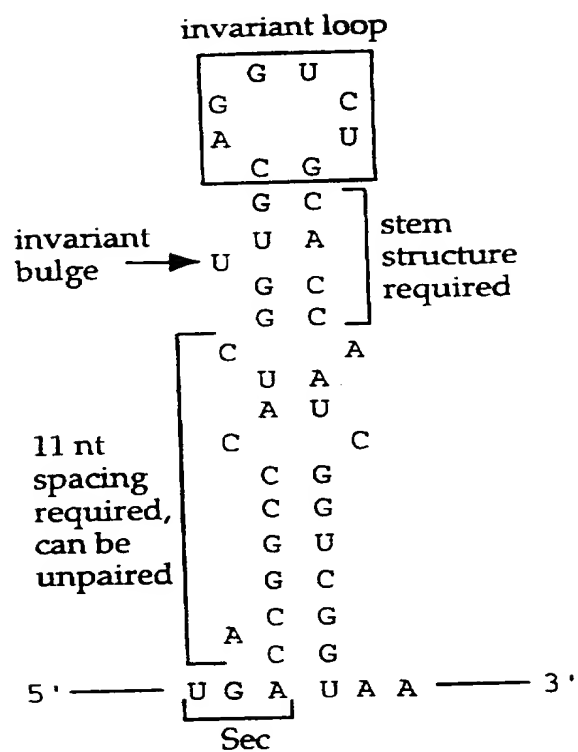


Figure 2

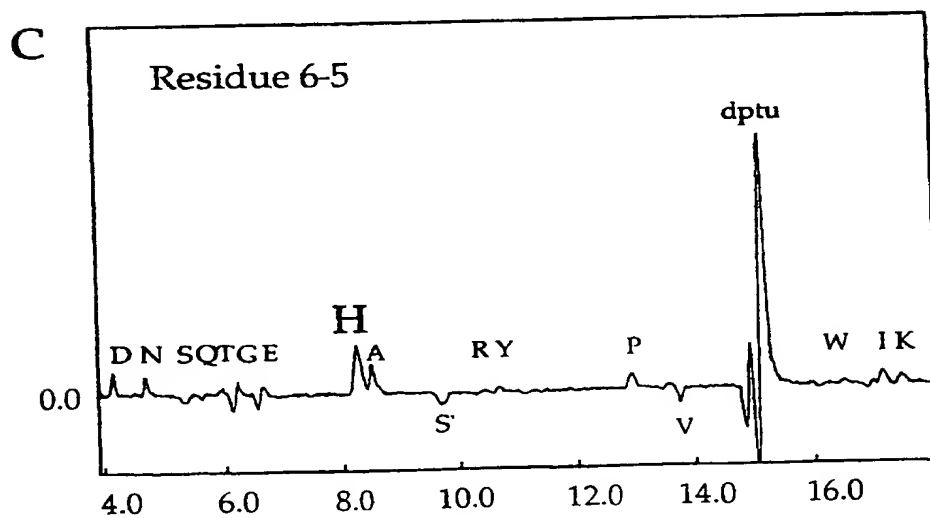
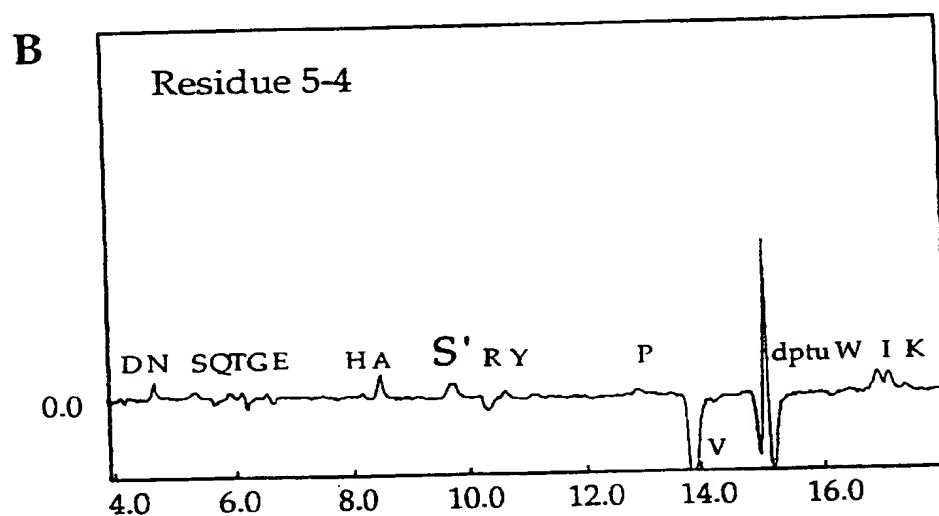
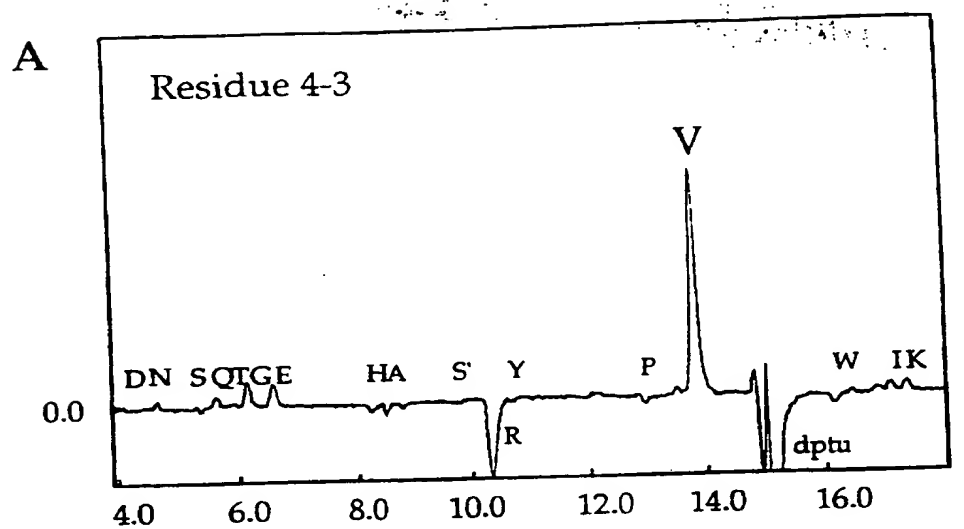


Figure 3

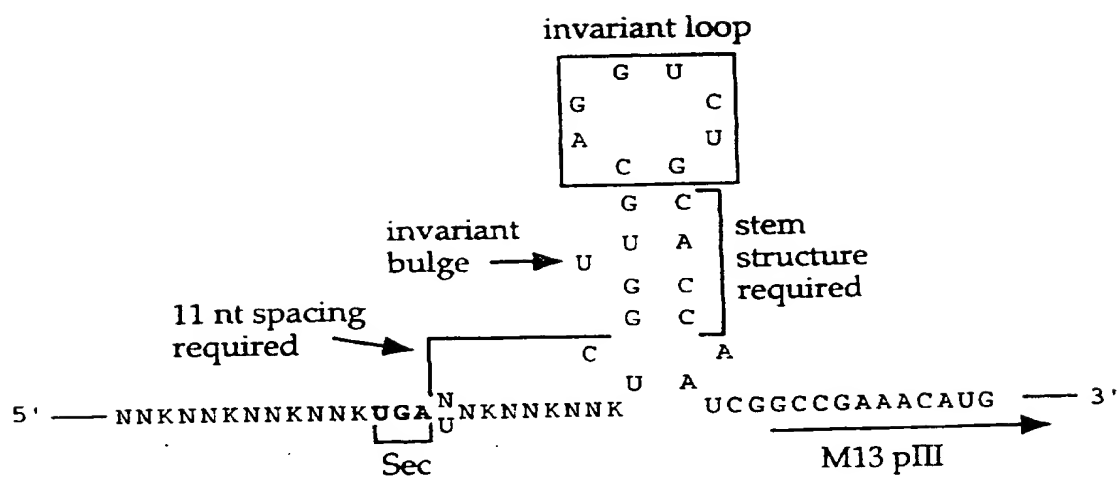


Figure 4

5/12

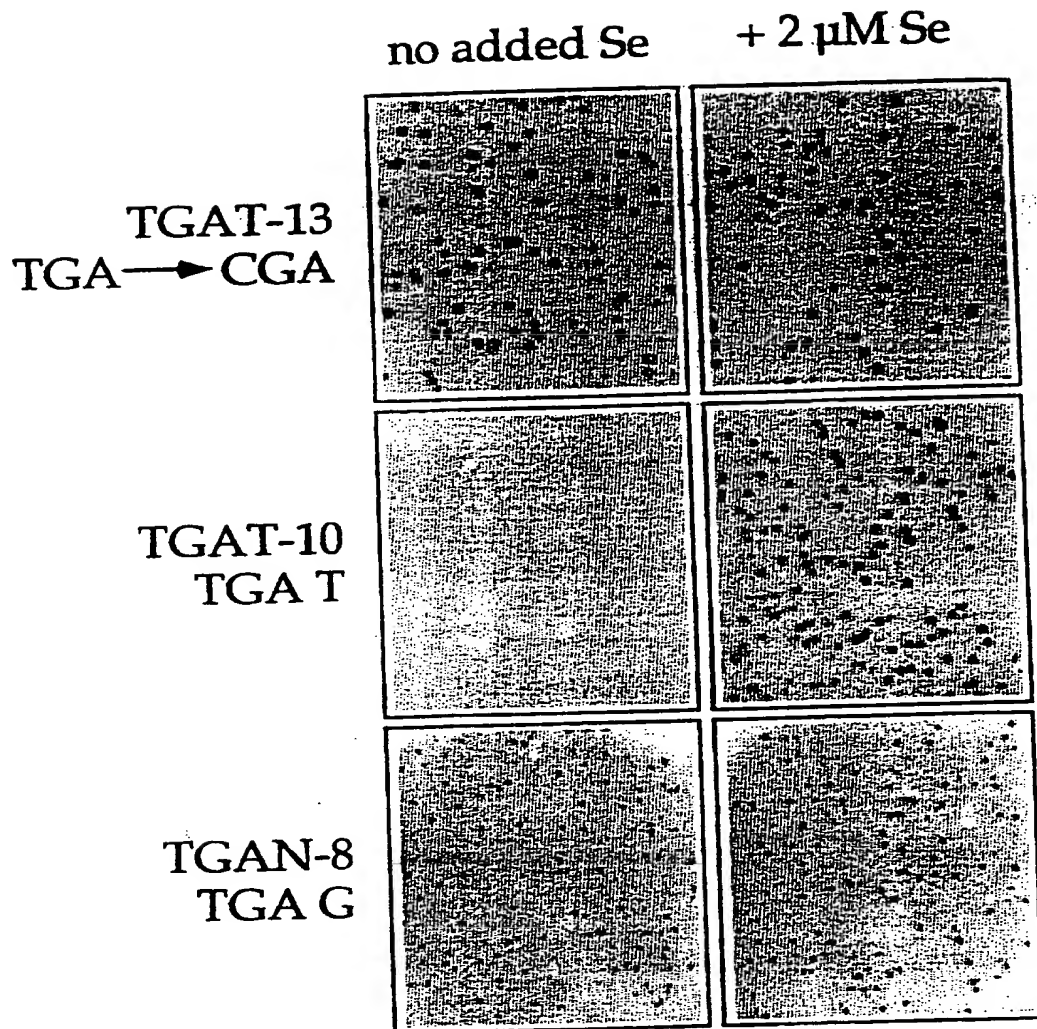


Figure 5

6/12

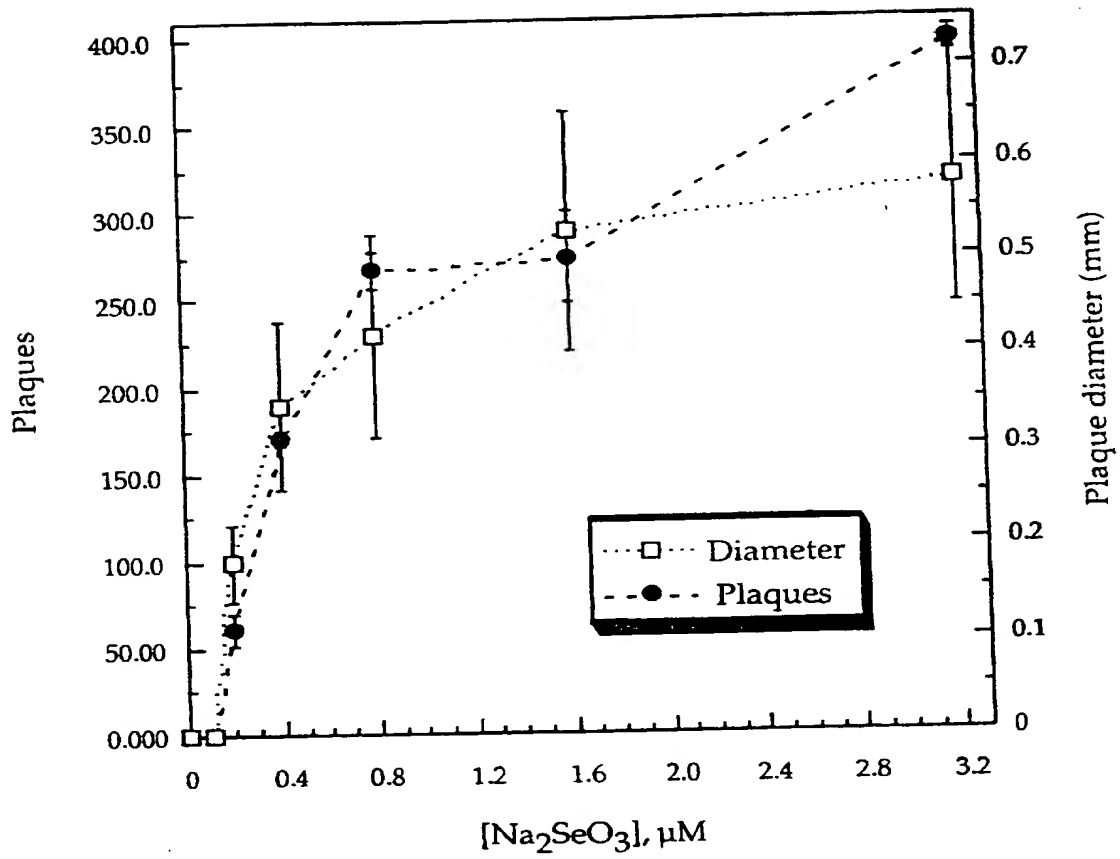
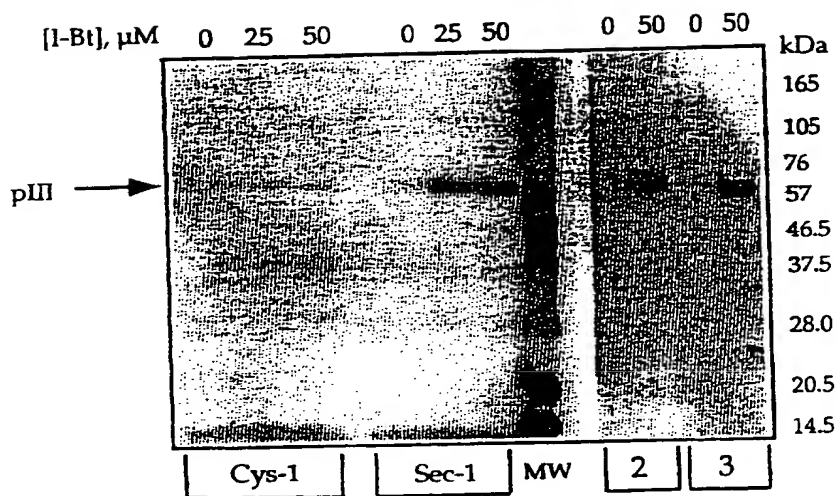


Figure 6

7/12

A



B

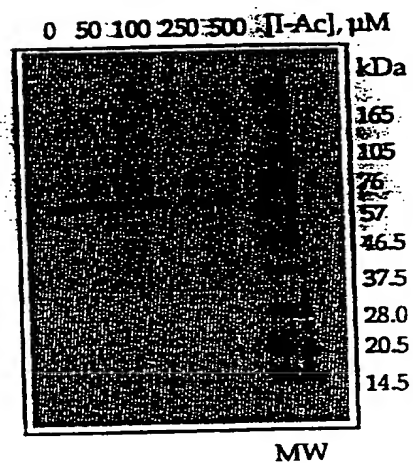
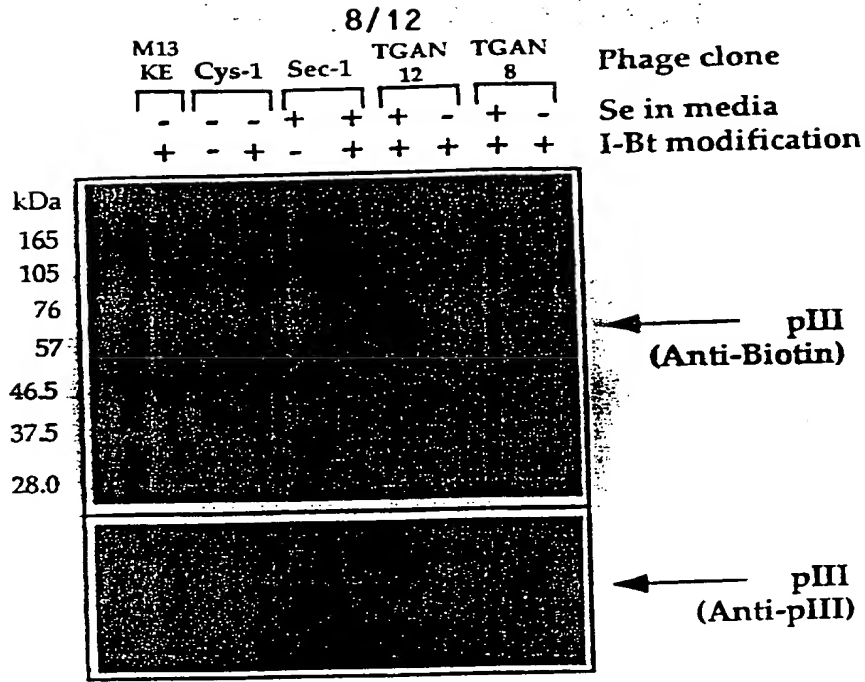


Figure 7

A



B

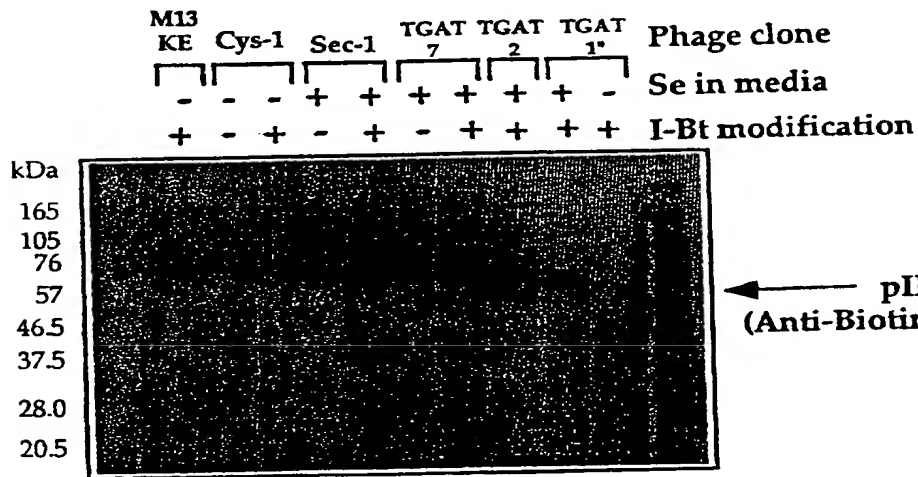


Figure 8

9/12

Fig 9

Clone	Random insert								Se-dependent?
TGAN-1	TCG	TCT	TTT	CCT	TGA	AAG	TCG	CCT	-
	S	S	F	P	op ^a	K	S	P	
TGAN-2	AAG	TGT	ACG	CTT	TGA	TCT	ATG	CTG	+
	K	C	T	L	Sec	S	M	L	
TGAN-3	TTG	CTT	TTG	CCT	TGA	AAT	GTT	CTT	-
	L	L	L	P	op	N	V	L	
TGAN-4	ATG	ACT	ACG	CAG	TGA	CCT	TCT	CTG	+
	M	T	T	Q	Sec	S	M	L	
TGAN-5	CAT	ATT	CCG	CCG	TGA	ACG	AAT	CCT	-
	H	I	P	P	op	T	N	P	
TGAN-6	AAG	GCT	CTG	TGT	TGA	CAG	GAT	TCG	+
	K	A	L	C	Sec	Q	D	S	
TGAN-7	CTT	CTT	CCG	TGT	TGA	GCT	CAG	CCG	+ ^b
	L	L	P	C	Sec	A	Q	P	
TGAN-8	CAT	CAT	CCG	ACT	TGA	GCT	AAG	CAG	-
	H	H	P	T	op	A	K	Q	
TGAN-9	ATG	CCT	CCT	ACG	TGA	ATG	GCT	ACG	-
	M	P	P	T	op	M	A	T	
TGAN-10	AAT	TGG	TTT	TCT	TGA	CTG	ACT	ACG	-
	N	W	F	S	op	L	T	T	
TGAN-11	CTG	CAT	CCG	ACG	TGA	GCT	CGG	CCT	-
	L	H	P	T	op	A	R	P	
TGAN-12	GAT	AGG	GGG	CCT	TGA	GCG	AAG	ATT	-
	D	R	G	P	op	A	K	I	
TGAN-13	GCG	TCT	TTG	CCT	TGA	AGG	ACG	AGT	-
	A	S	L	P	op	R	T	S	

^aop: opal suppression: Sec or W, depending on Se availability

^bTGAN-7 production was Se-enhanced; Se supplementation yielded larger (3-4x diameter) and more (10x) plaques.

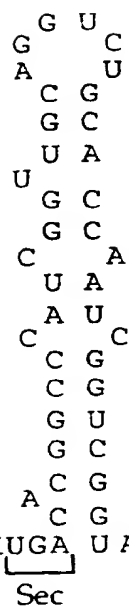
~~Table 1~~ Selected Library TGAN clones. TGAN-1 was expressed as a pMal-pIII fusion, and tryptophan incorporation was verified by N-terminal sequencing.

10/12

Fig 10

Clone	Random insert								Se- dependent?
TGAT-1	L	P	R	Q	Sec W	S	P		+
	TTG	CCG	CGT	CAG	TGA	TGG	TCT	CCG	
TGAT-2	L	T	G	T	Sec C	Q	N		+
	TTG	ACT	GGT	ACG	TGA	TGT	CAG	AAT	
TGAT-3	E	A	S	R	Sec C	S	T		+
	GAG	GCG	TCG	CGT	TGA	TGT	TCG	ACT	
TGAT-4	K	L	A	R	Sec S	A	S		+
	AAG	TTG	GCT	CGT	TGA	TCG	GCG	TCG	
TGAT-5	N	G	A	Q	Sec S	R	H		+
	AAT	GGG	GCG	CAG	TGA	TCG	AGG	CAT	
TGAT-6	A	S	P	T	Sec F	K	P		+
	GCG	AGT	CCT	ACT	TGA	TTT	AAG	CCG	
TGAT-7	C	A	H	P	Sec S	T	R		+
	TGT	GCT	CAT	CCG	TGA	TCT	ACT	CGT	
TGAT-8	Q	S	T	R	Sec W	N	D		+
	CAG	TCG	ACG	CGG	TGA	TGG	AAT	GAT	
TGAT-9	I	V	E	S	Sec L	N	P		+
	ATT	GTG	GAG	TCG	TGA	TTG	AAT	CCG	
TGAT-10	T	Q	R	M	Sec L	P	P		+
	ACG	CAG	CGT	ATG	TGA	TTG	CCG	CCC	
TGAT-11	V	Q	Y	T	Sec L	P	K		+
	GTG	CAG	TAT	ACG	TGA	TTG	CCG	AAG	
TGAT-12	A	G	Q	S	Sec S	T	D		+
	GCT	GGG	CAG	TCG	TGA	TCG	ACT	GAT	
TGAT-13	L	S	A	S	R	S	Q	F	-
	CTG	TCT	GCG	AGT	CGA	TCG	CAG	TTT	

Table 2. Selected TGAT library clones. TGAT-13 carried a T → C point mutation within the opal codon.



Translation/
Spontaneous oxidation

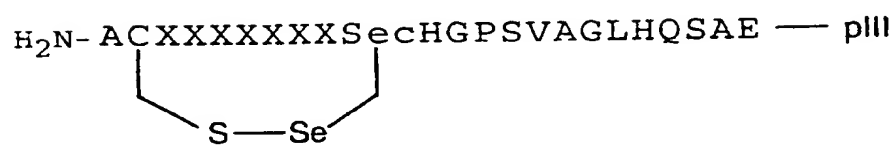


Figure 11

12/12

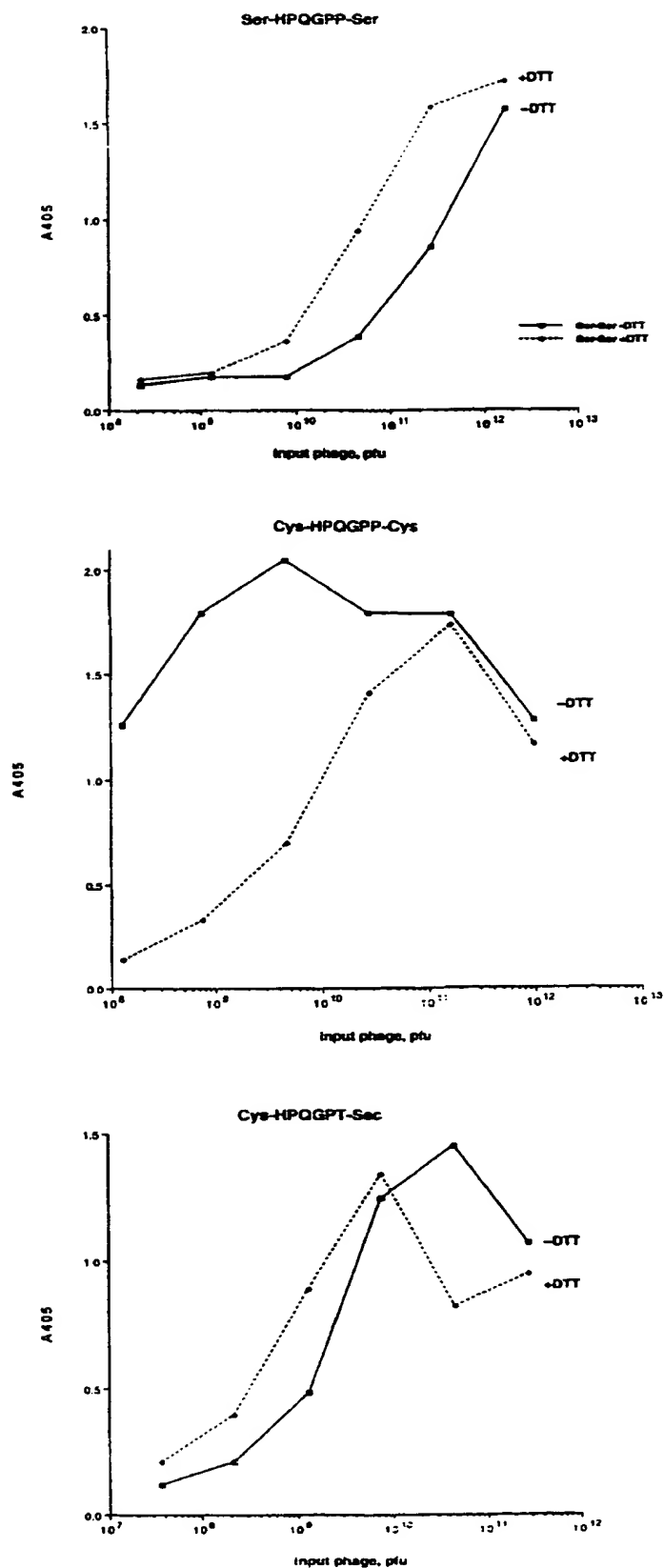


FIGURE 12